

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

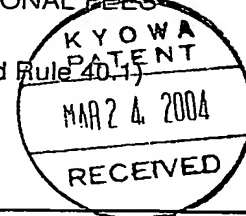
PCT

To:

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INVITATION TO PAY ADDITIONAL FEES

(PCT Article 17(3)(a) and Rule 40.1)



REGISTERED MAIL

Date of mailing
(day/month/year)

19/03/2004

Applicant's or agent's file reference

143332-025

PAYMENT DUE

within 45 ~~days~~ days
from the above date of mailing

International application No.

PCT/JP 03/10703

International filing date
(day/month/year)

25/08/2003

Applicant

DAI NIPPON PRINTING CO., LTD.

1. This International Searching Authority

- (i) considers that there are 4 (number of) inventions claimed in the international application covered by the claims indicated ~~below~~ on the extra sheet:

and it considers that the international application does not comply with the requirements of unity of invention (Rules 13.1, 13.2 and 13.3) for the reasons indicated ~~below~~ on the extra sheet:

- (ii) ☒ has carried out a partial international search (see Annex) ☐ will establish the international search report on those parts of the international application which relate to the invention first mentioned in claims Nos.:
see annex
- (iii) will establish the international search report on the other parts of the international application only if, and to the extent to which, additional fees are paid

2. The applicant is hereby invited, within the time limit indicated above, to pay the amount indicated below:

EUR 945,00 x 3 = EUR 2.835,00
Fee per additional invention number of additional inventions total amount of additional fees

Or, _____ x _____ = _____

The applicant is informed that, according to Rule 40.2(c), the payment of any additional fee may be made under protest, i.e., a reasoned statement to the effect that the international application complies with the requirement of unity of invention or that the amount of the required additional fee is excessive.

3. ☐ Claim(s) Nos. _____ have been found to be unsearchable under Article 17(2)(b) because of defects under Article 17(2)(a) and therefore have not been included with any invention.

Name and mailing address of the International Searching Authority



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This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-8,16,17,35-43,54-58

A SIM, an IC module or an IC card having a contact interface, a noncontact interface and a USB interface

2. Claims: 9-15,59-64

A SIM, an IC module or an IC card providing extra contact terminals disposed between terminals C1 and C5 among eight contact terminals C1 to C8, and a terminal CE2 disposed between the terminals C4 and C8

3. Claims: 18-34, 65-67

A SIM holder for detachably holding a SIM, said SIM holder comprising:
a case; a terminal plate contained in the case and capable of being electrically connected to a contact-terminal plate included in the SIM; and an antenna coil formed in the case; wherein terminals to be connected to the antenna coil among those formed on the terminal plate are those to be connected to contact terminals, not used for contact communication, of the SIM or to extra terminals.

4. Claims: 44-53

An IC module comprising a pair of U-shaped circuits formed so as to surround the IC chip.

1. Reference is made to the following documents:

D1: US-A-5598032
D2: XP002267750
D3: EP-A-0409241
D4: WO-A-02 31762

2. Regarding claim 1, document D1 (cf. figures 8/9 and column 3, line 13 - column 4, line 15) discloses a chip card comprising:
a substrate (cf. figure 8: dielectric 20);
an IC chip (cf. figures 8/9: integrated circuit chip 8) mounted on the substrate and provided with a dual interface for contact and noncontact communication (cf. column 3, lines 14-16);
a contact-terminal plate mounted on the substrate and provided with a plurality of contact terminals (cf. metal pads 10/11);
and a card base holding the substrate, the IC chip and the contact-terminal plate (cf. figure 1);
wherein antenna terminals of the IC chip are connected to the contact terminals (cf. figure 8/9: pads 11) that are not used for contact communication.

D1 does not explicitly mention that said chip card may be a SIM (subscriber identification module). However, it is generally known to a

person skilled in the art that chip cards are used as SIMs for mobile phones (cf. D2, page 9, chapter "GSM-Karte").

Hence, the subject-matter of claim 1 is not inventive.

3. The features added by dependent claims 2 and 3 are also known from D1 since figure 2 and the associated description discloses that there is an antenna coil on the card base and since figure 8 shows that the antenna terminals are connected to the terminals C4 and C8 included in the eight contact terminals of the card.

Hence, the subject-matter of claims 2 and 3 is not inventive as well.

4. Claim 4 only mentions the geometrical properties of a standard SIM as, for instance, known from document D2 (cf. page 10, figure 1.1-5) and claim 5 merely adds the generally known fact that pictures, text or numbers may be printed on the surfaces of a SIM or a chip card.

Hence, the subject-matter of claims 4 and 5 is not inventive as well.

5. Independent claim 6 concerns a SIM comprising a substrate; an IC chip mounted on the substrate; a contact-terminal plate provided with a plurality of contact terminals; and a SIM base holding the substrate, the IC chip and the contact-terminal plate; wherein the contact terminals of the contact-terminal plate include extra contact terminals to be connected to antennal terminals formed on the IC chip.

Accordingly, claim 6 differs from independent claim 1 only in stipulating that extra contact terminals are used instead of the unused contact terminals.

The addition of extra contact terminals cannot be considered to add anything inventive in view of document D3 which proposes to provide additional terminals next to the ISO standard connection terminals (cf. figure 4 and associated description).

Hence, the subject-matter of independent claim 6 is not inventive.

6. Claim 7 concerns a SIM comprising a substrate; an IC chip mounted on the substrate; a contact-terminal plate provided with a plurality of contact terminals; and a SIM base holding the substrate, the IC chip and the contact-terminal plate; wherein the SIM base is provided with a SIM antenna coil, and an antenna-terminal plate to be connected to the SIM antenna coil formed on a surface of the substrate opposite a surface on which the contact-terminal plate is mounted.

D1 shows in figure 1 a chip card wherein a base is provided with an antenna coil, and an antenna-terminal plate to be connected to the antenna coil formed on a surface of the substrate opposite a surface on which the contact-terminal plate is mounted.

Hence, the only difference which remains is that said SIM is not explicitly mentioned in D1. Hence, the same argumentation as in paragraph 2 above applies and the subject-matter of claim 7 is not

inventive.

7. Claim 8 concerns a SIM according to claim 6 or 7, wherein the IC chip includes a contact interface conforming to ISO 7816-2 and ISO 7816-3, a noncontact interface conforming to ISO 144(4)3 and an USB contact interface (the description correctly mentions ISO 14443 instead of ISO 1443).

D4 shows a card combining the ISO 7812 standard and an USB contact interface. However, none of the available documents suggests a combination of said three different standards in one SIM.

Accordingly, compared to the teachings of D1, the additional USB interface represents the special technical feature of claim 8 in the sense of Rule 13.2 PCT.

Hence, claim 8 represents the first inventive concept of the application and relates to the problem to provide an additional interface with an significantly increased data transfer rate compared to standard ISO protocols (cf. description page 30, paragraph 2).

8. Claim 9 depends on claim 6 and adds the feature that the extra contact terminals are a terminal CE1 disposed between terminals C1 and C5 among eight (ISO 7816) contact terminals C1 to C8, and a terminal CE2 disposed between the terminals C4 and C8.

D3 which proposes the usage of extra contact terminals outside the area of the standard ISO terminals (cf. figure 4) does neither disclose nor suggest the specific positioning of said extra terminals as defined in claim 9 which provides the advantageous effect to make extra terminals available without requiring an increased contact area.

Accordingly, all the features added by claim 9 represent the special technical features of claim 9 in the sense of Rule 13.2 PCT.

Hence, claim 9 represents the second inventive concept of the application and relates to the problem to provide additional contact pads without requiring an increased contact area compared to the ISO standard.

9. Claims 10-15 depend on claim 9 and, therefore, belong to the same inventive concept.

10. Claims 16 and 17 depend on claims 6 or 7. The features mentioned therein are identical to those of claims 4 and 5. Therefore, a similar reasoning applies and the subject-matter of claims 16 and 17 is not inventive.

11. Independent claim 18 concerns a SIM holder for detachably holding a SIM, said SIM holder comprising:
a case; a terminal plate contained in the case and capable of being electrically connected to a contact-terminal plate included in the SIM; and an antenna coil formed in the case; wherein terminals to be connected to the antenna coil among those formed on the terminal plate are those to be connected to contact terminals, not used for contact

communication, of the SIM.

None of the documents cited above discloses a SIM holder comprising a case with an antenna coil formed inside. Therefore, all of the features of claim 18 represent its special technical features in the sense of Rule 13.2 PCT.

Hence, claim 18 represents the third inventive concept of the application and relates to the problem to allow a contact card to communicate with a noncontact reader/writer and/or to the problem to increase the communication range for noncontact cards.

Claims 19-27 depend on claim 18. Hence, they belong to the same inventive concept.

12. Independent claim 28 concerns a SIM holder similar to the device defined in claim 18. The only difference is that the SIM holder according to claim 28 utilizes extra contact terminals instead of said unused terminals.

Accordingly, the special technical features of claim 28 are similar to those of claim 18. Furthermore, claim 28 addresses the same technical problem so that claim 28 and its dependent claims 29-34 belong to the third inventive concept as well.

13. Claim 35 concerns an IC module comprising a substrate; an IC chip mounted on the substrate; and a contact-terminal plate having a plurality of contact terminals and mounted on the substrate; wherein the plurality of contact terminals of the contact-terminal plate includes extra contact terminals connected to antenna terminals of the IC chip.

The wording of claim 35 is nearly identical to the wording of claim 6. Only the term "SIM" is replaced by "IC chip". Hence, the same reasoning applies (cf. paragraph 5 above) and the subject-matter of claim 35 is not inventive.

14. Similarly, claim 36 corresponds to claim 8. Therefore, claim 36 and its dependent claims 37-43 belong to the first inventive concept.

15. Claim 44 is directed to an IC module comprising a substrate; an IC chip mounted on the substrate; and a contact-terminal plate provided with a plurality of contact terminals and mounted on the substrate; wherein a pair of U-shaped circuits are formed so as to surround the IC chip on a surface of the substrate opposite a surface of the substrate on which the contact-terminal plate is mounted, and the U-shaped circuits are connected to antenna terminals of the IC chip, respectively.

D1 does not teach to provide a pair of U-shaped circuits formed so as to surround the IC chip on a surface of the substrate opposite a surface of the substrate on which the contact-terminal plate is mounted, and to connect the U-shaped circuits to the antenna terminals of the IC chip. Accordingly, these features represent the special technical features of claim 44.

Hence, claim 44 represents the fourth inventive concept and relates to

the problem to provide a universal arrangement for connecting the antenna terminals of different IC chips (cf. page 39, paragraph 2).

Dependent claims 45-53 belong to the same inventive concept since they depend on claim 44.

16. Claims 54-57 essentially correspond to claims 1, 3, 6, and 7, respectively. Therefore, a similar reasoning applies and the subject-matter of said claims is not inventive.

17. Claim 58 corresponds to claim 8 and, therefore, belongs to the first inventive concept. Claim 59 corresponds to claim 9. Hence, claim 59 and its dependent claims 60-64 belong to the second inventive concept.

18. Claim 65 is directed to an IC card holder similar to the SIM holder of 28. Therefore, claim 65 and the dependent claims 66 and 67 belong to the third inventive concept.

19. A comparison of the objective problems seen in the light of the description and the drawings of the present application indicates that there is no technical correspondence between these problems nor do they show any corresponding technical effects.

Accordingly, the present invention relates to four different concepts:

(i) "A SIM, an IC module or an IC card having a contact, a noncontact and a USB interface" according to the claims 1-8, 16, 17, 35-43, and 54-58.

(ii) "A SIM, an IC module or an IC card providing extra contact terminals disposed between terminals C1 and C5 among eight contact terminals C1 to C8, and a terminal CE2 disposed between the terminals C4 and C8" according to claims 9-15, and 59-64.

(iii) "A SIM holder for detachably holding a SIM, said SIM holder comprising:
a case; a terminal plate contained in the case and capable of being electrically connected to a contact-terminal plate included in the SIM; and an antenna coil formed in the case; wherein terminals to be connected to the antenna coil among those formed on the terminal plate are those to be connected to contact terminals, not used for contact communication, of the SIM or to extra terminals" according to claims 18-34, and 65-67.

(iv) "An IC module comprising a pair of U-shaped circuits formed so as to surround the IC chip" according to claims 44-53.

It is noted that the claims mentioned under the first group do not only include the claims belonging to the above mentioned concept (i) but also those which do not make any contribution over the available prior art.

1. The present communication is an Annex to the invitation to pay additional fees (Form PCT/ISA/206). It shows the results of the international search established on the parts of the international application which relate to the invention first mentioned in claims Nos.:

1-8, 16, 17, 35-43, 54-58

2. This communication is not the international search report which will be established according to Article 18 and Rule 43.

3. If the applicant does not pay any additional search fees, the information appearing in this communication will be considered as the result of the international search and will be included as such in the international search report.

4. If the applicant pays additional fees, the international search report will contain both the information appearing in this communication and the results of the international search on other parts of the international application for which such fees will have been paid.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 598 032 A (FIDALGO JEAN-CHRISTOPHE) 28 January 1997 (1997-01-28) column 3, line 12 -column 4, line 15; figures 1,8,9	1-7, 16, 17, 35, 54-57
X	DE 195 00 925 A (ORGA KARTENSYSTEME GMBH) 18 July 1996 (1996-07-18) the whole document	1-7, 16, 17, 35, 54-57
A	HAGHIRI Y., TARANTINO T.: "Vom Plastik zur Chipkarte, Wegweiser zum Aufbau und zur Herstellung von Chipkarten" 1999, CARL HANSER VERLAG, MÜNCHEN, WIEN XP002267750 page 8 -page 10	4, 16, 22
A	EP 0 409 241 A (TOKYO SHIBAURA ELECTRIC CO) 23 January 1991 (1991-01-23) column 3, line 8 - line 21; figure 4	6, 35
A	WO 02 31762 A (LEYDIER ROBERT ANTOINE ;ST MICROELECTRONICS INC (US); FRUHAUF SERG) 18 April 2002 (2002-04-18) abstract	8

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *8* document member of the same patent family

Patent Family Annex

Information on patent family members

International Application No

PCT/JP 03/10703

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 5598032	A	28-01-1997	FR	2716281 A1	18-08-1995
			DE	69531845 D1	06-11-2003
			EP	1331602 A2	30-07-2003
			EP	0671705 A2	13-09-1995
			JP	8052968 A	27-02-1996
DE 19500925	A	18-07-1996	DE	19500925 A1	18-07-1996
EP 0409241	A	23-01-1991	JP	2862177 B2	24-02-1999
			JP	3049996 A	04-03-1991
			DE	69003319 D1	21-10-1993
			DE	69003319 T2	24-02-1994
			EP	0409241 A1	23-01-1991
			KR	9304316 B1	26-05-1993
			US	5126548 A	30-06-1992
WO 0231762	A	18-04-2002	AU	8858101 A	22-04-2002
			EP	1325467 A1	09-07-2003
			WO	0231762 A1	18-04-2002